

Amendments to the Drawings:

Please replace the drawing sheet bearing Figs. 3-6 with the revised drawing sheet presented in Appendix A of this paper.

REMARKS

The Office Action mailed on March 02, 2005, has been reviewed and the comments of the Patent and Trademark Office have been considered. Prior to this paper, claims 1-26 were pending, with claims 5-18 and 26-28 being withdrawn. By this paper, Applicants do not cancel or add any claims. Therefore, claims 1-28 remain pending.

Applicants respectfully submit that the present application is in condition for allowance for the reasons that follow.

Indication of Allowable Subject Matter

Applicants thank Examiner Luong for the indication that claim 3 contains allowable subject matter and for allowing claim 20.

Drawing Objections

The drawings are objected to as failing to show hatching in Figs. 3-6. As seen above, Figs. 3-6 have been amended, and Applicants respectfully request reconsideration in view of the amendments to the drawings.

The drawings are also objected to as failing to show every feature of the invention as claimed with respect to the use of the phrase “connecting beam sections” in claim 19. As seen above, claim 19 has been amended, and Applicants request reconsideration.

The drawings are also objected to as allegedly being inconsistent with the specification in view of the recitation of “Q” in the specification. Applicants traverse this objection. “Q” is not tied to any particular figure or location within the figures. The location of “P” and “Q” may vary according to the cross-sectional shape of connecting rod, and therefore it is not necessary to show the referential character Q in the drawings. Indeed, the use of variables “P” and “Q” is merely shorthand to convey information about examples of rods according to the invention, the information about these examples being detailed in the tables of the application. The specification makes this clear at page 31, by explaining that for the examples presented in the tables, structures “were observed at two portions, portion P of

the smallest cross sectional area in connecting beam section B and portion Q having a cross sectional area 1.5 times larger than that of portion P of the smallest cross sectional area.” It is thus submitted that 37 CFR §1.83 does not require the showing of “Q” in the figures .

Specification Objections

The specification is objected to as allegedly being inconsistent with the drawings in view of the use of the “Q” in the specification. As explained above, there is no inconsistency between the drawings and the specification, as “Q” is merely shorthand to convey exemplary data.

Rejections Under 35 U.S.C. §112, First Paragraph

In the Office Action, claims 19 and 21-25 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. As seen above, claim 19 has been amended, and Applicants respectfully request reconsideration.

Rejections Under 35 U.S.C. §112, Second Paragraph

In the Office Action, claims 19 and 21-25 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. As seen above, claim 19 has been amended, and Applicants respectfully request reconsideration.

Rejections Under 35 U.S.C. § 102

Claims 1, 2 and 4 stand rejected under 35 U.S.C. §102(b) as being anticipated by JP '317 (Japanese Utility Model JP 10-306317). Claim 1 is further rejected under this same statute in view of Mrdjenovich (U.S. Patent No. 5,048,368) or in view of Haman (U.S. Patent No. 5,737,976). In response, Applicants respectfully submit that the above claims are allowable for at least the reasons that follow.

Applicants rely on MPEP § 2131, entitled “Anticipation – Application of 35 U.S.C. 102(a), (b), and (e),” which states that a “claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” It is respectfully submitted that none of the cited references describe each and every element of independent claim 1, and thus the claims that depend therefrom.

* * * * *

As a preliminary matter, it is respectfully submitted that the claims rejected under §102 have not been adequately considered as a matter of law because the language after the “wherein” clause of claim 1 was not treated as a claim recitation.

The Office Action cites *Texas Instruments v. ITC*, as standing for the position that “the ‘wherein’ clause that merely expresses an inherent results, adds nothing to claim’s patentability.” This is not the case. *Texas Instruments* dealt with the clause “*whereby*,” not “*wherein*.” (A copy of *Texas Instruments* is attached as Exhibit I.)

Moreover, even if the *Texas Instruments* case were to be abstracted to cover the phrase “wherein,” it still would not apply, because the language following “wherein” in claim 1 does more than merely express an inherent result. For example, there is nothing in the preceding recitations that *require* that “the first and second joining sections gradually and continuously decrease in cross sectional area toward the connecting beam section and has a strength distribution in which a strength increases with a decrease in the cross sectional area,” as would be necessary for a result to be *inherent*.

In sum, it is respectfully submitted that the language after the phrase “wherein” in claim 1 further patentably distinguishes the present invention from the prior art, and must be considered as a matter of law.

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As just noted, claim 1 recites, as a patentably distinct feature, that “each of the first and second joining sections gradually and continuously decreases in cross sectional area toward the connecting beam section and *has a strength distribution in which a strength increases with a decrease in the cross sectional area.*” (Emphasis added.) In an exemplary embodiment according to claim 1, there is a connecting rod as shown in Fig. 1, including a connecting beam section (40) serving as a main body of the connecting rod, a big end (20), a small end (60), a first joining section (30) located between the connecting beam section and

the big end; and a second joining section (50) located between the connecting beam section and the small end (60). Each of the first and second joining sections (30, 50) gradually and continuously decreases in cross sectional area toward the connecting beam section (40).

An important feature of the invention of claim 1 is that each of the first and second joining sections (30, 50) has a strength distribution in which a strength increases with a decrease in the cross sectional area.

None of the cited references teach this feature. True, JP '317, Mrdjenovich and Haman do teach connecting rods. Still, assuming *arguendo* that at least Mrdjenovich and Haman teach joining sections that are gradually and continuously decreased in cross sectional area towards a connecting beam, these references still do not teach the feature of claim 1 that each of the joining sections has a strength distribution in which a strength increases with a decrease in the cross sectional area. Thus, claim 1 is not anticipated by any of these references.

As to claim 2, while it is true that JP '317 does refer to quenching to promote martensitic transformation, there is no teaching in JP '317 that a strength distribution is based on a proportion (%) of martensite. Thus, claim 2 is allowable for yet another reason.

As to claim 4, Applicants respectfully submit that there is nothing in the Derwent English Abstract of JP '317 that demonstrates that the strength distribution is *inherently* formed based on a distribution in at least one of a hardening temperatures and a tempering time for each of the first and second joining sections. First, there is no reference to temperature or time in the Abstract. Second, for a feature to be inherent, that feature must occur each and every time, pursuant to MPEP §2112. Since there is no evidence that this feature occurs each and every time the teachings of JP '317 are implemented, claim 4 is not inherently anticipated by this reference.

* * * * *

The feature differentiating the invention of claim 1 from the cited references is more than just mere design choice. It represents an innovative concept in producing rods that are both sufficiently strong and easy to machine. With the claimed feature, the joining sections have a strength distribution in which their strength increases with a reduction in cross sectional area, so that a portion having a small cross sectional area may have a high buckling strength. On the other hand, the big and small ends are relatively low in strength and are,

therefore, relatively easily machined. Hence, the connecting rod according to the present invention is relatively easily machined and has a high bucking strength. It will be understood that the high bucking strength may be obtained by controlling the amount of a metallurgical structural component in the connecting rod.

In contrast, in a conventional technique, a connecting rod is first formed to have, for example, a Brinell hardness of not higher than 300 in order to improve machinability and fatigue durability. Thereafter, portions which will not be subjected to machining are hardened to have a Brinell harness of not lower than 300. However, a strength sharply changes at a joining section between the hardened portion and the unhardened portion, so that it is difficult to obtain a sufficient buckling strength. Conversely, in case that hardening is made throughout a wide range of area of the work piece in order to obtain a necessary buckling strength, there arises a problem that machinability is degraded at portions which are to be machined. Thus, the invention according to the claims represents an innovative advancement over the prior art.

Claims 19 and 21-25

Applicants submit that amended claims 19 and 21-26 are allowable in view of the cited references for the pertinent reasons detailed above. Moreover, Applicants traverse the assertion in the Office Action that claims 19 and 21-26 were too vague and indefinite to be examined in view of the prior art. Applicants remind the PTO that a “claim limitation which is considered indefinite cannot be disregarded. (MPEP §2143.03, second paragraph.) Indeed, MPEP §2143.03 states that if “a claim is subject to more than one interpretation, at least one of which would render the claim unpatentable over the prior art, the examiner should reject the claim as indefinite . . . and should reject the claim over the prior art based on the interpretation of the claim that renders the prior art applicable.” (MPEP §2143.03, second paragraph.) Applicants respectfully submit that if claims 19 and 21-25 are not allowed in any next office action, that next office action be a non-final office action, since these claims have not yet been examined in view of the prior art, in contradiction to MPEP §2143.03.

Request for Rejoinder of Withdrawn Claims

Claims 5-8 stand withdrawn. Applicants note that these claims depend either directly or ultimately from claim 1. Applicants respectfully request that these claims be rejoined and allowed due to their dependency from claim 1, a claim that is allowable. Applicants respectfully submit that no significant burden is placed on the PTO by rejoining and examining these claims. Indeed, such action is concomitant with the indication that “upon allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim.”

Claims 26-28 should be rejoined and allowed for analogous reasons due to their dependency from claim 19.

Claims 9-18 are also withdrawn. These claims are *method claims drawn to a method of making the apparatus of claim 1*. Pursuant to MPEP § 821.04 and *In re Ochiai*, 71 F.3d 1565 USPQ2d 1127 (Fed. Cir. 1995), it is respectfully requested that these claim be rejoined and considered, since MPEP § 821.04 states that “when a product claim is found allowable, applicant may present claims directed to the process of making and/or using the patentable product.”

Conclusion

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of

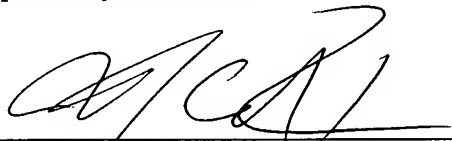
papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Examiner Luong is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

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